Application No.: 10/662,288

IN THE CLAIMS

Please amend the claims as follows:

1-12. (Cancelled)

13. (New) A method for forming a semiconductor device, comprising the steps of:

a) forming an insulating film comprising silicon on a substrate;

b) forming a high dielectric insulating film on the insulating film; and

c) irradiating a light onto the substrate having the high dielectric insulating film so as to reduce a crystal defect of the high dielectric insulating film.

14. (New) The method of claim 13, wherein the insulating film contains nitrogen.

15. (New) The method of claim 13, wherein the substrate is heated by a heating source other than the light during step c).

16. (New) The method of claim 13, wherein the light has a wavelength of 0.4μm or less.

17. (New) The method of claim 13, wherein the high dielectric insulating film contains at least one of hafnium, zirconium, lanthanum, cerium, praseodymium, neodymium, yttrium and aluminum.

18. (New) The method of claim 15, wherein the substrate is heated to about 100 to 500°C during step c).

19. (New) The method of claim 13, wherein a partial pressure of an oxygen gas or an oxygen compound gas is controlled during step c).

20. (New) The method of claim 13, wherein the atmosphere used in step c) includes a nitrogen gas or an inert gas.

21. (New) A method for forming a semiconductor device, comprising the steps of:

a) forming an insulating film comprising silicon on a substrate;

b) forming a high dielectric insulating film as a gate insulating film on the insulating film;

c) forming a gate electrode on the gate insulating film;

d) forming a side wall on a side face of the gate insulating film;

e) forming a source/drain region placed on the side face of the gate insulating film in the substrate; and

f) irradiating a light onto the substrate having the high dielectric insulating film and the source/drain region, so as to reduce a crystal defect of the high dielectric insulating film.

22. (New) The method of claim 21, wherein the insulating film contains nitrogen.

23. (New) The method of claim 21, wherein the substrate is heated by a heating source other than the light during step f).

24. (New) The method of claim 21, wherein a surface of the substrate has a temperature of 1150 to 1250°C during step f).

25. (New) The method of claim 21, wherein the light has a wavelength of 0.4μm or less.

26. (New) The method of claim 23, wherein the substrate is heated to about 100 to 500°C during step f).

27. (New) The method of claim 21, wherein the high dielectric insulating film contains at least one of hafnium, zirconium, lanthanum., cerium, praseodymium, neodymium, yttrium and aluminum.

28. (New) The method of claim 21, wherein a partial pressure of an oxygen gas or an oxygen compound gas is controlled during step f).

29. (New) The method of claim 21, wherein the atmosphere used in step f) includes a nitrogen gas or an inert gas.

30. (New) A method for forming a semiconductor device, comprising the steps of:

a) forming a high dielectric insulating film on a substrate;

b) forming a conductive film on the high dielectric insulating film;

c) irradiating a light onto the substrate having the high dielectric insulating film and the conductive film;

d) forming a gate insulating film and a gate electrode by removing a part of the high dielectric insulating film and the conductive film after step c);

e) forming a side wall on a side face of the gate insulating film; and

f) forming a source/drain region placed on the side face of the gate insulating film in the substrate.

31. (New) The method of claim 30, wherein a crystal defect of the high dielectric insulating film is reduced during step c).

32. (New) The method of claim 30, wherein the light has a wavelength of 0.4μm or less.

33. (New) The method of claim 30, wherein the conductive film contains titanium nitride.

34. (New) The method of claim 30, wherein the substrate is heated to about 300°C during step c).

35. (New) The method of claim 30, wherein the high dielectric insulating film contains at least one of hafnium, zirconium, lanthanum, cerium, prascodymium, neodymium, yttrium, and aluminum.

36. (New) The method of claim 30, wherein a partial pressure of an oxygen gas or an oxygen compound gas is controlled during step c).

37. (New) The method of claim 30, wherein the conductive film has a temperature of 850 to 950°C during step c).

38. (New) A method for forming a semiconductor device, comprising the steps of:

a) forming a high dielectric insulating film on a lower capacitor electrode;

b) irradiating a light on the high dielectric insulating film so as to reduce a crystal defect; and

c) forming an upper capacitor electrode on the high dielectric insulating film after step b), wherein the high dielectric insulating film is a capacitor insulating film.

39. (New) The method of claim 38, wherein the lower capacitor electrode is formed in the substrate.

40. (New) The method of claim 39, wherein the lower capacitor electrode is placed in the region between trench isolations.

41. (New) The method of claim 38, wherein the substrate is heated to about 300°C during step b).

42. (New) The method of claim 38, wherein the high dielectric insulating film contains at least one of hafnium., zirconium, lanthanum, cerium, praseodymium, neodymium, yttrium, and aluminum.

43. (New) The method of claim 38, wherein a partial pressure of an oxygen gas or an oxygen compound gas is controlled during step b).

44. (New) The method of claim 38, wherein the light has a wavelength of 0.4μm or less.